Financial Markets and Institutions

Abridged 10th Edition

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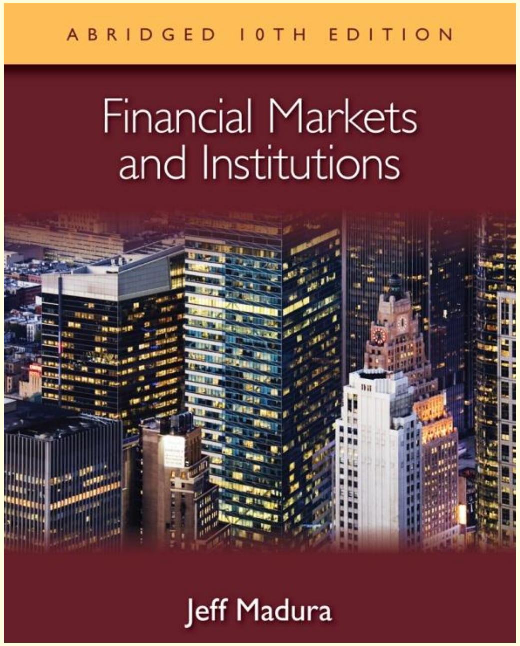

12 Market Microstructure and Strategies

Chapter Objectives

- describe the common types of stock transactions
- explain how stock transactions are executed
- describe the regulation of stock transactions
- explain how barriers to international stock transactions have been reduced

Stock Market Transactions

Placing an Order - To place an order to buy or sell a specific stock, an investor contacts a brokerage firm.

- The investor communicates the order to the broker by specifying (1) the name of the stock, (2) whether to buy or sell that stock, (3) the number of shares to be bought or sold, and (4) whether the order is a market or a limit order.
- Broker may provide a **bid quote** if the investor wants to sell a stock or an **ask quote** if the investor wants to buy a stock.
- **A Market Order** is executed at the best possible price.
- **A Limit Order** places a limit on the price at which a stock can be purchased or sold.

Stock Market Transactions

Placing an Order (Cont.)

- **Stop-Loss Order** - to protect gains or to limit losses.
  - Investor specifies a selling price that is **below the current market price** of the stock.
  - When the stock price drops to the specified level, the stop-loss order becomes a market order.
- **Stop-Buy Order**
  - Investor specifies a purchase price that is **above the current market price**.
  - When the stock price rises to the specified level, the stop-buy order becomes a market order.

Stock Market Transactions

Placing an Order (Cont.)

- **Placing an Order Online**
  - Many Internet brokers accept orders online, provide real-time quotes, and provide access to information about stocks.
  - Some online brokerage services offer zero-commission trades. However, investors must maintain a certain amount of funds in their brokerage accounts.

Stock Market Transactions

Margin Trading

- Investors use cash along with funds borrowed from their broker to make the purchase.
- The Federal Reserve imposes **initial margin requirements**, which represent the minimum proportion of funds that must be covered with cash (currently 50%).
- Investors must establish an account (called a **margin account**) with their broker.
- Over time, the market value of the stock will change. Investors are subject to a **maintenance margin**, which is the minimum proportion of equity that an investor must maintain in the account as a proportion of the market value of the stock (currently 25%).

Margin Trading

- **Margin Calls**
  - A large volume of margin lending exposes the stock markets to a potential crisis.
  - A high volume of margin calls results in more sales, putting downward pressure on stock prices, leading to additional margin calls.

Margin Trading

- **Impact on Returns**
  - The return (R) is affected by the proportion of the investment that is from borrowed funds.

$$R = \frac{SP - INV - LOAN + D}{INV}$$

$$\begin{aligned}
\text{where } SP &= \text{selling price of stock} \\
INV &= \text{initial investment by investor, not including borrowed funds} \\
LOAN &= \text{loan payments on borrowed funds, including principal and interest} \\
D &= \text{dividend payments}
\end{aligned}$$

Stock Market Transactions

Short Selling

- Investors place an order to sell a stock that they do not own. The investor borrows the stock from another investor and will return it to the investor from whom they borrowed it.
- If the price of the stock declines by the time the short-sellers purchase it in the market, the short-sellers earn the difference between the price at which they initially sold the stock and the price they paid to obtain the stock.
- The risk of a short sale is that the stock price may increase over time, forcing the short-seller to pay a higher price for the stock than the price at which it was initially sold.

Short Selling (Cont.)

- **Measuring the Short Position of a Stock**
  - The ratio of the number of shares that are currently sold short divided by the total number of shares outstanding.
  - **Short interest ratio** - the number of shares that are currently sold short divided by the average daily trading volume over a recent period.
- **Using a Stop-Buy Order to Offset Short Selling** - Investors commonly use a stop-buy order to limit their losses.
- **Concerns about Short Selling** - When the credit crisis intensified in 2008, hedge funds and other investors took large short positions on many stocks. Some critics argued that the large short sales placed additional downward pressure on prices and created paranoia in the stock market..

Stock Market Transactions

Short Selling (Cont.)

- **Restrictions on Short Selling**

  - In October 2008, the SEC required that short-sellers borrow and deliver the shares to the buyers within three days. This rule is important because there were many cases in which brokerage firms were allowing speculators to engage in naked shorting, in which they sell a stock short without first borrowing the stock.

  - In 2009, the SEC also reinstated the uptick rule (previously eliminated in 2007), which prohibits speculators from taking a short position except after the stock price increases. This rule is intended to prevent short selling in response to a stock's continuous downward price momentum.

How Stock Transactions are Executed

Floor Brokers

- Floor brokers are situated on the floor of a stock exchange and fulfill and execute orders.

Market-Makers (Specialists)

- Can serve a broker function by matching up buy and sell orders on the New York Stock Exchange.
- Making a market implies that they stand ready to buy or sell certain stocks even if no other investors are willing to participate.
- Market-makers take positions to capitalize on the discrepancy between the prevailing stock price and their own valuation of the stock.
- May take the opposite position to uninformed “noise traders.”

How Stock Transactions are Executed

The Spread on Stock Transactions

The spread is the difference between the ask price and the bid price, and is measured as a percentage of the ask price. The spread is influenced by the **following factors**:

- **Order Costs** - clearing costs and the costs of recording transactions increase the bid-ask spread.
- **Inventory Costs** - the cost of maintaining an inventory of a stock increases the bid-ask spread.
- **Competition** - having multiple market-makers promotes competition and reduces the bid-ask spread.
- **Volume** - Stocks that are more liquid have a large trading volume and a lower bid-ask spread.
- **Risk** - If the firm has risky operations, its stock price is more volatile, therefore increasing the bid-ask spread.

How Stock Transactions are Executed

Electronic Communication Networks

- ECNs are automated systems for disclosing and executing stock trades. The SEC requires that any quote provided by a market-maker be made available to all market participants.
- **Interaction between Direct Access Brokers and ECNs**
  - A direct access broker is a trading platform on a computer website that allows investors to trade stocks without the use of a broker.
  - The website serves as the broker and interacts with ECNs that can execute the trade.
  - The advantage of a direct access broker is that investors can monitor the supply and prices of shares and the demand for shares on different ECNs.

Exhibit 12.1 Example of an ECN Book at a Given Point in Time

BID OR ASK?	SHARES	PRICE
Bid	500	$32.50
Bid	300	$32.50
Bid	400	$32.56
Bid	1,000	$32.60
Bid	400	$32.64
Bid	1,200	$32.64
Bid	300	$32.68
Ask	400	$32.78
Ask	1,000	$32.80
Ask	300	$32.84
Ask	500	$32.84
Ask	600	$32.88

Program Trading

- Program trading represents a computerized response by institutional investors to either buy or sell a large basket of stocks in response to movements in a particular stock index.
- **Impact of Program Trading on Stock Volatility**
  - Program trading is often cited as the cause of a decline or rise in the stock market.
  - On May 6, 2010, stock prices declined abruptly in what is now referred to as the "**flash crash**." Overall, stocks declined by more than 9 percent on average before reversing and recovering most of those losses on that same day, when more than 19 billion shares were traded. It appears that the flash crash was triggered by computerized trading.

Regulation of Stock Trading

Circuit Breakers

- Restrictions on trading when stock prices or a stock index reaches a specified threshold level.

Trading Halts

- Stock exchanges may impose trading halts on particular stocks when they believe market participants need more time to receive and absorb material information that could affect the stock's value.
- Trading halts are intended to reduce stock price volatility, as the market price is adjusted by market forces in response to news.

Regulation of Stock Trading

Securities and Exchange Commission –

The Securities Act of 1933 and the Securities Exchange Act of 1934 gave the SEC authority to monitor exchanges and required listed companies to file a registration statement and financial reports with the SEC and the exchanges.

- Some **SEC regulations** involve the following requirements:
  - Firms must publicly disclose all information about themselves that could affect the value of their securities.
  - Employees of firms may take positions in their own firm's securities only during periods when they do not know of inside information.
  - Participants in security markets who facilitate trades must work in a fair and orderly manner.

Regulation of Stock Trading

Securities and Exchange Commission

- **Structure of the SEC**
  - Consists of five commissioners appointed by the President of the United States and confirmed by the Senate.
  - Each commissioner serves a five-year term. The terms are staggered so that, each year, one commissioner's term ends and a new appointee is added.
  - The president also selects one of the five commissioners to chair the commission.

Regulation of Stock Trading

Securities and Exchange Commission

- **Key Divisions of the SEC**
  - The **Division of Corporate Finance** reviews the registration statement filed when a firm goes public, corporate filings for annual and quarterly reports, and proxy statements.
  - The **Division of Market Regulation** requires the orderly disclosure of securities trades
  - The **Division of Enforcement** assesses possible violations of the SEC’s regulations and can take action against individuals or firms.
- **SEC Oversight of Corporate Disclosure**
  - In October 2000, the SEC issued Regulation Fair Disclosure (FD), which requires firms to disclose relevant information broadly to investors at the same time.

Trading International Stocks

Reduction in Transaction Costs

- In recent years, countries have consolidated their exchanges, increasing efficiency and reducing transaction costs.
- Many international stock exchanges are now fully computerized.

Reduction in Information Costs

- Information about foreign stocks is now available on the Internet, enabling investors to make more informed decisions without having to purchase information about these stocks.

Reduction in Exchange Rate Risk

- A firm may be able to obtain all the financing it needs with one stock offering denominated in euros.

SUMMARY

- Investors engage in various types of stock transactions. They can place an order by phone or online. They can request that a transaction be executed at the prevailing price or only if the stock price reaches a specified level. They can finance a portion of their stock purchase with borrowed funds as a means of increasing the potential return on their investment. They can also sell stocks short.

SUMMARY (Cont.)

- Organized stock exchanges such as the NYSE and the Nasdaq market facilitate secondary stock market transactions. Members of the exchanges trade stock for their own accounts or for their clients. The exchanges are served by floor brokers and market makers, who execute transactions. An over-the-counter exchange also exists, where stock transactions are executed through a telecommunications network. Electronic communication networks (ECNs) facilitate the execution of orders. ECNs can interact with a trading platform on a website that allows investors to trade stocks without the use of a broker.

SUMMARY (Cont.)

- Stock markets are regulated to ensure that investors are treated fairly. Stock trading is regulated by the individual exchanges and by the SEC. Many of the regulations are intended to prevent unfair or unethical trading practices on the security exchanges. The stock exchanges and the SEC attempt to prevent the use of inside information by investors.
- As various stock markets have removed their barriers to foreign investors, they have become more globally integrated. Transaction costs, information costs, and exchange rate risk have all been reduced, making it easier for investors to engage in international stock trading.